

Radiography led to improved patient satisfaction but increased short-term pain in patients with low-back pain

Kendrick D, Fielding K, Bentley E, et al. Radiography of the lumbar spine in primary care patients with low back pain: randomised controlled trial. *BMJ*. 2001 Feb 17;322:400-5.

QUESTION

In primary-care patients with low-back pain ≥ 6 weeks of duration, does radiography of the lumbar spine help improve clinical outcomes or satisfaction with care?

DESIGN

Randomized {allocation concealed*}†, unblinded,* controlled trial with 3- and 9-month follow-up.

SETTING

73 general practices in Nottinghamshire, southern Derbyshire, northern Lincolnshire, and northern Leicestershire, England.

PATIENTS

421 patients who were 20 to 55 years of age (median age 39 y, 59% women) and had had low-back pain for ≥ 6 weeks. Exclusion criteria were chronic back pain (> 6 -mo duration); radiography of the lumbar spine in the previous year; unexplained weight loss or fever; use of oral steroids; history of malignancy, tuberculosis, injection drug use, or positive result on HIV test; symptoms or signs of a cauda equina lesion; or pregnancy. Follow-up was 95% at 3 months and 94% at 9 months.

INTERVENTION

In addition to receiving usual care, patients were allocated to radiography of the lumbar spine ($n = 210$) or no radiography ($n = 211$).

Doctors could request radiography for patients in the no-radiography (control) group if they considered it clinically necessary.

MAIN OUTCOME MEASURES

Difference in mean Roland disability score (an adaptation of the Sickness Impact Profile). Secondary outcomes included a visual analog scale for pain and a scale for patient satisfaction.

MAIN RESULTS

Analysis was by intention to treat. At 3 months, the Roland disability score was higher in the radiography group than in the control group (median score 4 vs 3, $P = 0.05$), and radiography led to more patients with pain ($P = 0.04$) (Table). At 9 months, differences were no longer statistically significant for the Roland disability score (median score 3 vs 2, $P = 0.06$) or pain ($P = 0.11$) (Table). Patients in the radiography group were more satisfied with their care than were patients in

the control group at 9 months (median score 21 vs 19, $P < 0.01$) but not at 3 months. Of patients who had available findings on radiography, 69% (118 of 170 patients) in the radiography group and 68% (15 of 22 patients) in the control group had abnormalities, which included discovertebral degeneration, deformity, and minor congenital abnormalities.

CONCLUSION

In primary-care patients with low-back pain, radiography in addition to usual care improved patient satisfaction but increased short-term pain and did not improve other clinical outcomes.

Source of funding: NHS Research and Development Health Technology Assessment Programme.

For correspondence: Dr. D. Kendrick, Division of General Practice, School of Community Health Sciences, University Park, Nottingham NG7 2RD, England, UK. FAX 44-115-970-9389. ■

*See Glossary.

†Information provided by author.

Radiography vs no radiography in primary-care patients with low-back pain‡

Outcomes	Radiography	No radiography	RRI (95% CI)	NNH (CI)
Pain at 3 mo	74%	65%	14% (0.5 to 31)	11 (6 to 288)
Pain at 9 mo	65%	57%	14% (-3.0 to 34)	Not significant

‡Abbreviations defined in Glossary; RRI, NNH, and CI calculated from data in article.

COMMENTARY

Recommendations in clinical guidelines to avoid radiographic examinations in patients with uncomplicated low-back pain are largely based on observational studies showing poor predictive power. (1). The continued use of lumbar-spine radiography is driven by patients' perceptions that this is a useful investigation and by clinicians' willingness to refer for social reasons, including patient satisfaction and reassurance (2). The study by Kendrick and colleagues contributes to the evidence that the examination is not useful in the management of back pain and is actually associated with more pain and poorer health status in the short term. On the other hand, patients having radiographic examination were more likely to be satisfied with care at 9 months, and patients in both groups said they would have wanted the examination.

The large number of general practices participating in the trial means that the results are probably generalizable, at least to the United Kingdom, although we do not know what proportion of total eligible patients were included in the trial. Participants were recruited at home, which is not the usual context for referral, but this study characteristic is unlikely to have a large influence on outcomes. By excluding the

large proportion of patients whose back pain was getting better by 6 weeks, the investigators focused on a group for whom some uncertainty remained about the best strategy for investigation and treatment. Now we have to find methods of improving the satisfaction of patients with back pain without resorting to radiographic examination. We need to communicate a broader understanding of back pain as a problem that usually does not require technologic investigation or medical intervention.

*Gene Feder, MD
Queen Mary, University of London
London, England, UK*

References

- van Tulder MW, Assendelft WJ, Koes BW, Bouter LM. Spinal radiographic findings and nonspecific low back pain. A systematic review of observational studies. *Spine*. 1997;22:427-34.
- Little P, Cantrell T, Roberts L, et al. Why do GPs perform investigations? The medical and social agendas in arranging back X-rays. *Fam Pract*. 1998;15:264-5.